

AMENDMENTS TO THE CLAIMS

Claims 1-14 (Cancelled).

15. (Original) A photonic crystal formed on a semiconductor substrate, the substrate having a receiving region, the photonic crystal comprising:

a plurality of spaced-apart photonic stacks formed over the receiving region of the substrate, the photonic stacks having top surfaces, each photonic stack having a plurality of layers of material that alternate between a first layer of material and a second layer of material, the first layer of material having a first dielectric constant, the second layer of material having a second dielectric constant; and

an interstack material formed over the substrate between and adjoining the plurality of photonic stacks.

16. (Original) The crystal of claim 15 wherein the first layer of material is a dielectric.

17. (Original) The crystal of claim 15 wherein the interstack material has a top surface that is substantially coplanar with the top surfaces of the stacks.

18. (Original) The crystal of claim 15 wherein the interstack material has a top surface that is above the top surfaces of the stacks.

19. (Original) The method of claim 15 wherein the layer of interstack material is a dielectric having a dielectric constant that is equal to the dielectric constant of the layer of first material.

20. (Original) The method of claim 15 wherein the layer of interstack material is a dielectric having a dielectric constant that is different from the dielectric constant of the layer of first material.

21. (New) A photonic crystal formed on a semiconductor material of a first conductivity type, the semiconductor material having a top surface, the photonic crystal comprising:

a diffusion region of a second conductivity type formed in the semiconductor material; and

a plurality of spaced-apart stacks formed on the semiconductor material over the diffusion region, each stack having a plurality of layers of material and extending away from the top surface of the semiconductor material.

22. (New) The crystal of claim 21 wherein the plurality of layers of material alternate between a first layer of material and a second layer of material, the first layer of material having a first dielectric constant, the second layer of material having a second dielectric constant.

23. (New) The crystal of claim 22 and further comprising an interstack material formed over the semiconductor material between and adjoining the plurality of stacks.

24. (New) The crystal of claim 23 wherein the interstack material has a top surface that is substantially coplanar with a top surface of each stack.

25. (New) The crystal of claim 23 wherein the interstack material has a top surface that lies below a top surface of each stack.

26. (New) The crystal of claim 23 wherein the interstack material has a top surface that lies above a top surface of each stack.

27. (New) The crystal of claim 21 and further comprising an interstack material formed over the semiconductor material between and adjoining the plurality

of stacks, the interstack material having a top surface that is substantially coplanar with a top surface of each stack.

28. (New) The crystal of claim 21 and further comprising an interstack material formed over the semiconductor material between and adjoining the plurality of stacks, the interstack material having a top surface that lies below a top surface of each stack.

29. (New) The crystal of claim 21 and further comprising an interstack material formed over the semiconductor material between and adjoining the plurality of stacks, the interstack material having a top surface that lies above a top surface of each stack.

30. (New) A photonic crystal formed on a semiconductor material of a first conductivity type, the semiconductor material having a top surface, the photonic crystal comprising:

an array of spaced-apart stacks formed on the semiconductor material, each stack having a plurality of layers of material and extending away from the top surface of the semiconductor material; and

an interstack material formed over the semiconductor material between and adjoining the plurality of stacks.

31. (New) The crystal of claim 30 wherein the plurality of layers of material alternate between a first layer of material and a second layer of material, the first layer of material having a first dielectric constant, the second layer of material having a second dielectric constant.

32. (New) The crystal of claim 31 wherein the interstack material has a top surface that is substantially coplanar with a top surface of each stack.

33. (New) The crystal of claim 31 wherein the interstack material has a top surface that lies below a top surface of each stack.

34. (New) The crystal of claim 31 wherein the interstack material has a top surface that lies above a top surface of each stack.

35. (New) The crystal of claim 30 wherein the interstack material has a top surface that is substantially coplanar with a top surface of each stack.

36. (New) The crystal of claim 30 wherein the interstack material has a top surface that lies below a top surface of each stack.

37. (New) The crystal of claim 30 wherein the interstack material has a top surface that lies above a top surface of each stack.